

CLAIMS

1. A positive electrode active material for an alkaline storage battery comprising a nickel hydroxide powder, wherein said nickel hydroxide is a solid solution containing magnesium,

a magnesium content in said nickel hydroxide is 2 to 7 mol% of all metallic elements contained in said nickel hydroxide,

a tap density of said nickel hydroxide is 1.9 g/cm³ or more,

a half-width of a peak attributed to (101) face near $2\theta = 37$ to 40° in a powder X-ray diffraction pattern of said nickel hydroxide by CuK α radiation is 0.7 to 1.2° , and

a sulfate ion content in said nickel hydroxide is 0.5 wt% or less.

2. The positive electrode active material for an alkaline storage battery in accordance with claim 1,

wherein, in said powder X-ray diffraction pattern of said nickel hydroxide by CuK α radiation, a ratio of intensity B of a peak attributed to (001) face near $2\theta = 18$ to 21° to intensity A of said peak attributed to (101) face near $2\theta = 37$ to 40° : B/A is 1.1 or more.

3. The positive electrode active material for an alkaline storage battery in accordance with claim 1, wherein said nickel hydroxide is a solid solution further containing

at least one element selected from the group consisting of cobalt and manganese.

4. The positive electrode active material for an alkaline storage battery in accordance with claim 3, wherein an amount of said at least one element selected from the group consisting of cobalt and manganese, contained in said nickel hydroxide, is 0.5 to 3 mol% of all metallic elements contained in said nickel hydroxide.

5. The positive electrode active material for an alkaline storage battery in accordance with claim 1, wherein the surface of said nickel hydroxide is coated with an oxide of cobalt.

6. The positive electrode active material for an alkaline storage battery in accordance with claim 5, wherein an average valence number of cobalt contained in said oxide of cobalt is larger than 3.

7. A positive electrode for an alkaline storage battery comprising the active material in accordance with claim 1.

8. The positive electrode for an alkaline storage battery in accordance with claim 7, further containing a powder comprising an oxide of at least one element selected from the group consisting of Y, Yb, Lu, Ti and Ca.

9. The positive electrode for an alkaline storage battery in accordance with claim 7, containing 0.5 to 3 parts by weight of a powder comprising an oxide of at least one

20040124-010402

element selected from the group consisting of Y, Yb, Lu, Ti and Ca per 100 parts by weight of said active material.

10. An alkaline storage battery comprising the positive electrode in accordance with claim 7, a negative electrode and an alkaline electrolyte.

11. The alkaline storage battery in accordance with claim 10, wherein said alkaline electrolyte contains sodium hydroxide.

12. The alkaline storage battery in accordance with claim 11, wherein the concentration of said sodium hydroxide in said alkaline electrolyte is 1 to 5 mol/liter.

204070-48404007